Statewide Water Analysis Network

A Potential Pilot Study to Improve Use of Data to Meet Future Urban Water Demands

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Introduction

The California Department of Water Resources is implementing recommendations contained in the *California Water Plan Update 2005*. One of the recommendations in the implementation plan is "Recommendation 11 – Improve Water Data Management and Scientific Understanding". This recommendation evolved from the recognition that:

> California needs better data and analytical tools to produce useful and more integrated information on water quality, environmental objectives, economic performance, social equity objectives, and surface water and groundwater interaction. Today, it is difficult to compare, much less integrate, water data and information from different local entities to understand and resolve regional and statewide water management issues. **To make significant progress toward a more comprehensive scientific understanding, California needs to create a new information exchange and management system and more integrated analytical tools** that can be used to document and share knowledge as it is developed.[1]

In cooperation with the Statewide Water Analysis Network (SWAN) advisory group, DWR agreed to begin the effort of improving information exchange by exploring how information produced for Urban Water Management Plans could be used more effectively to support regional and statewide planning efforts. This document describes the objectives for the pilot study and describes potential participants, tasks, and methods that could be used to meet the objectives.

Objectives of Pilot Study

This list of objectives represents the desired outcomes from conducting the proposed pilot study to improve the use of data to meet future urban water demands.

1. Improve communication between DWR and entities gathering and reporting resources related information

2. Help streamline information gathering that is currently provided through multiple reporting mechanisms.

3. Identify areas of potential synthesis between data and information required for
    a. Urban Water Management Plans
    b. General Plans, Specific Plans, CEQA, and Infrastructure Plans (e.g. Master Plans)
    c. SB 610 / SB 221 water supply documents
    d. Integrated Regional Water Management Plans
    e. Status of Water Use Efficiency Implementation
    f. California Water Plan Updates
    g. State and federal grant funded activities

[1] *California Water Plan Update 2005*, Volume 1: Chapter 4, p 4.4.

4. Partner with subject matter experts, water retailers, wholesalers, and regional planning entities to
    a. Improve integration and sharing of planning data
    b. Streamline data gathering and reporting

5. Identify data related concerns and challenges faced by planning entities when preparing to meet future urban water demands

6. Produce a report with recommendations for how to use integrated information from the planning efforts described above to prioritize water supply investments including:
    a. Water supply systems
    b. Water quality improvements
    c. Groundwater recharge
    d. Water use effectiveness
    e. Recycled water systems
    f. Resource efficient land use within regional growth scenarios
    g. Strategies to address impacts from climate change

Data Requirements for the California Water Plan

One of DWR's interests in this pilot study is to use information gathered through Urban Water Management Plans more directly to support the California Water Plan and Integrated Regional Water Management Planning. Today this is not possible due to differences or uncertainty in assumptions by the preparers of the UWMP's and the intended use at the regional and statewide level. For example, population served is a key factor required for the Water Plan, but many water providers report the number of connections instead. It is important to have accurate reporting of population served by water agencies in order to estimate water used in areas not covered by Urban Water Management Plans. Some of the data items that DWR would like to reconcile between Urban Water Management Plans and the California Water Plan are shown in the table below. Not all of the information shown in the table is currently required in Urban Water Management Plans. Efforts during this pilot study will highlight the data requirements of various planning processes and the pilot team will recommend how to improve the synthesis between these planning efforts. Other information such as the relationship between energy and water use, the affects of climate change on water management, and the linkage between water management and land use will be explored in the California Water Plan. How to gather and share these types of information will be explored during the pilot study.

Summary of Water Plan Data Requirements that Can Be Informed by UWMP's (Reported for current and expected future values)		
Population served	Household size	Number of connections
Water price	Household income	Employment statistics
Groundwater management information	Supply source, production and delivery	Water conservation savings
Large landscape areas	Outdoor urban water use	Urban land use

Ideal Participants

Planning to meet future urban water demands takes place at many different scales within California. In order to share information effectively among the multitude of agencies involved in planning for and supplying water for urban uses, we must gain an understanding of the information needed by each of those entities and then how their informational needs are similar or different. Figure 1 illustrates one way to illustrate the exchange of information between different water management entities. Information is generated, shared, reported, archived and applied by many sources and transmitted in a variety of ways. DWR would like to work closely with a number of planning entities currently engaged in gathering and sharing information from all of the perspectives represented to attempt to improve and simplify some data transfer pathways. Ideally, a group of entities from two distinct geographic regions in the state will be selected to allow the study of information sharing through all of the potential interactions shown in Figure 1.

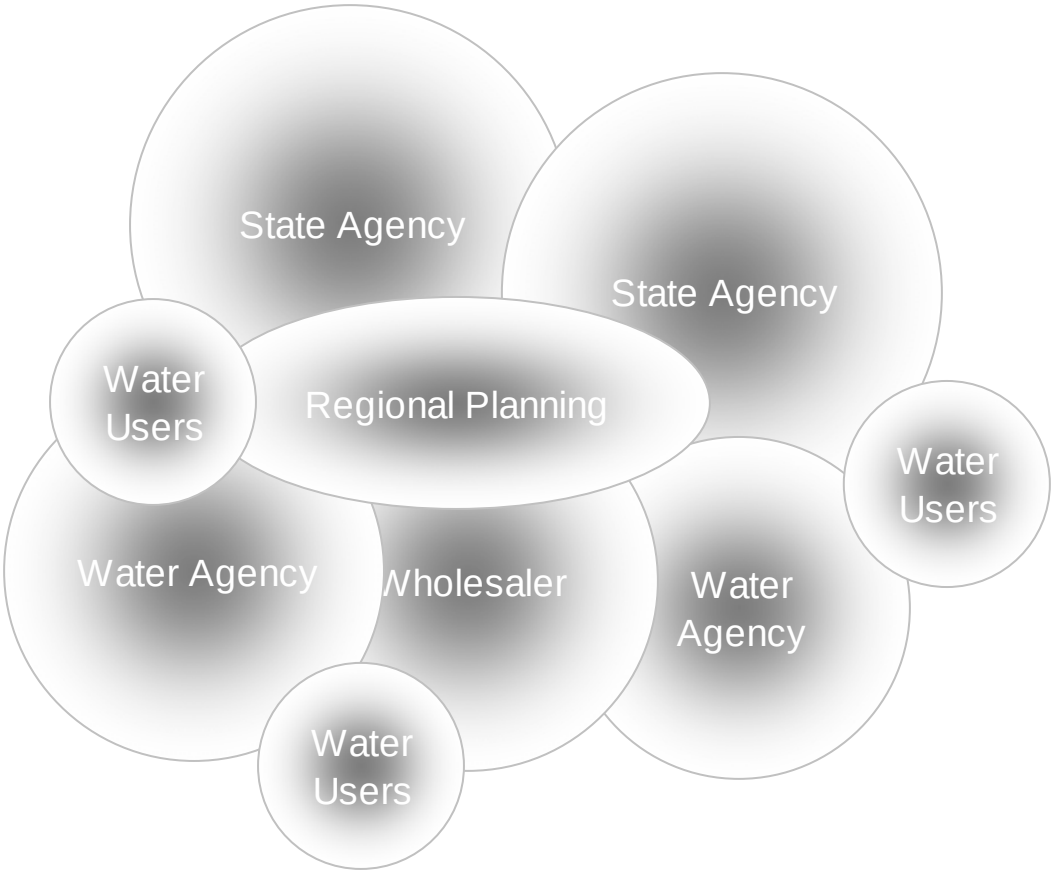

Figure 1: Information Sharing for Water Management Planning

Potential Pilot Tasks

This list of potential tasks represents a list of actions that could be conducted to accomplish the pilot objectives.

1. Identify common or overlapping data needs between required and voluntary reporting
2. Identify common challenges reconciling data at different spatial and temporal scales or for different purposes
3. Identify current data gathering methods and analytical tools
4. Identify data categories / establish preliminary data dictionary
5. Identify and describe data needed among different water management entities and reconcile with data availability.
6. Develop meta-data reporting standards (for example, quality assurance procedures and data georeferencing)
7. Identify sources of reported information
8. Identify potential coordinated reporting mechanisms
9. Formulate recommendations

Potential Methods to Conduct Tasks

This list of potential methods to conduct the tasks represents how the actions could be accomplished.

1. Establish a pilot leadership team
2. Select participants who can help accomplish pilot activities
3. Review and summarize planning and reporting requirements
4. Develop questionnaires to help focus interactions among participants to meet pilot objectives
5. Form an “Interview Team” and meet with small groups of participants to discuss specific items using questionnaires
6. Form a team to identify, gather, reconcile and share relevant digital information to study challenges faced and to explore opportunities for improved use of information and streamlined data reporting
7. Conduct SWAN workshops at regular intervals to discuss findings and refine next steps
8. Prepare report of findings and recommendations and present to SWAN